7. (NEW) A process for creating optimized elements of a device, comprising:

(a) selecting an equation or set equations that models the behavior of the elements of a device;

(b) selecting a range for each input variable in said equation or set of equations;

(c) selecting the number of trials;

(d) selecting the logical distribution function of each of the said input variables;

(e) selecting at least two fuzzy level boundaries for each of the said phenomenon;

(f) generating values for all of said input variables of all of said trials, within said input variable's said range and within said logical distribution, using Monte Carlo simulations;

(g) solving said equation or equations to produce outputs to produce a Meta Model;

(h) increasing or decreasing the generated values of one of said input variables by fixed increments for each of said trials;

(i) solving said equation or equations using the incremented or decremented values of one of said input values;

(j) identifying the fuzzy level placement within said fuzzy level boundary for each of said outputs generated using said incremented or decremented input values for each of said trials;

(k) calculating the probability of said fuzzy level placement for one of said outputs by dividing the number of said outputs at each of the said fuzzy levels by the number of said trials;

(l) categorizing said fuzzy level placements for said output as indicating a positive or negative correlation;

(m) categorizing the magnitude of said fuzzy level placement when there are more than two of the said fuzzy level boundaries;

(n) repeating the process steps h through m for each of the remaining input variables;

(o) mapping said correlations and said probabilities of the relationships between said input variables and phenomena in the form of a fuzzy cognitive map; and

(p) adjusting the characteristics of said elements of said device, in accordance with said fuzzy cognitive map.

8. A process for creating optimized elements of a device as in claim 7, wherein said device is mechanical.

9. A process for creating optimized elements of a device as in claim 7, wherein said device is electrical.

10. A process for creating optimized elements of a device as in claim 7, wherein said device is optical.

11. A process for creating optimized elements of a device as in claim 7, wherein said device is hydraulic.

12. A process for creating optimized elements of a device as in claim 7, wherein said device is pneumatic.

13. A process for creating optimized elements of a device as in claim 7, wherein said device is magnetic.

14. A process for creating optimized elements of a device as in claim 7, wherein adjusting the characteristics of said elements of said device, in accordance with said fuzzy cognitive map, is done by changing the dimensions of a part of a device.

15. A process for creating optimized elements of a device as in claim 7, wherein adjusting the characteristics of said elements of said device, in accordance with said fuzzy cognitive map, is done by changing the composition of a part of a device.

16. A process for creating optimized elements of a device as in claim 7, wherein adjusting the characteristics of said elements of said device, in accordance with said fuzzy cognitive map, is done by replacing one part with another part.

17. A process for creating optimized elements of a device as in claim 7, wherein adjusting the characteristics of said elements of said device, in accordance with said fuzzy cognitive map, is done by altering the design of a part.

18. A process for creating optimized elements of a device as in claim 17, wherein adjusting the characteristics of said elements of said device, in accordance with said fuzzy cognitive map, is done by altering the design of a part in response to the mechanical dynamics of said part.

19. A process for creating optimized elements of a device as in claim 17, wherein adjusting the characteristics of said elements of said device, in accordance with said fuzzy cognitive map, is done by altering the design of a part in response to the fluid dynamics of said part.

20. A process for creating optimized elements of a device as in claim 17, wherein adjusting the characteristics of said elements of said device, in accordance with said fuzzy cognitive map, is done by altering the design of a part in response to the thermodynamics of said part.

21. A process for creating optimized elements of a device as in claim 17, wherein adjusting the characteristics of said elements of said device, in accordance with said fuzzy cognitive map, is done by altering the design of a part in response to the electromagnetics of said part.

22. (NEW) A process for predicting the behavior of a target population under given conditions, comprising:

(a) selecting an equation or set equations that models the behavior of a population;

(b) selecting a range for each input variable in said equation or set of equations;

(c) selecting the number of trials;

(d) selecting the logical distribution function of each of the said input variables;

(e) selecting at least two fuzzy level boundaries for each of the said phenomenon;

(f) generating values for all of said input variables of all of said trials, within said input variable's said range and within said logical distribution, using Monte Carlo simulations;

(g) solving said equation or equations to produce outputs to produce a Meta Model;

(h) increasing or decreasing the generated values of one of said input variables by fixed increments for each of said trials;

(i) solving said equation or equations using the incremented or decremented values of one of said input values;

(j) identifying the fuzzy level placement within said fuzzy level boundary for each of said outputs generated using said incremented or decremented input values for each of said trials;

(k) calculating the probability of said fuzzy level placement for one of said outputs by dividing the number of said outputs at each of the said fuzzy levels by the number of said trials;
(l) categorizing said fuzzy level placements for said output as indicating a positive or negative correlation;
(m) categorizing the magnitude of said fuzzy level placement when there are more than two of the said fuzzy level boundaries;
(n) repeating the process steps h through m for each of the remaining input variables;
(o) mapping said correlations and said probabilities of the relationships between said input variables and phenomena in the form of a fuzzy cognitive map; and
(p) predicting the behavior of a target population by examining said fuzzy cognitive map.

23. A process for predicting the behavior of a target population under given conditions as in claim 22, wherein said population is human.

24. A process for predicting the behavior of a target population under given conditions as in claim 23, wherein said prediction is the basis of a report that estimates is the basis of an advertisement campaign.

25 A process for predicting the behavior of a target population under given conditions as in claim 22, wherein said prediction is used to create a report that estimates a product's usage pattern.

26. A process for predicting the behavior of a target population under given conditions as in claim 23, wherein said prediction is used to create a report that estimates a product's usage pattern.

27. A process for predicting the behavior of a target population under given conditions as in claim 23, wherein said prediction is used to create a report that estimates a commodity's usage pattern.

28. A process for predicting the behavior of a target population under given conditions as in claim 23, wherein said prediction is used to create a report that estimates a service's usage pattern.

29. A process for predicting the behavior of a target population under given conditions as in claim 22, wherein said population is not human.

30. A process for predicting the behavior of a target population under given conditions as in claim 29, wherein said prediction is used to create a report that estimates the behavior of livestock.

31. A process for predicting the behavior of a target population under given conditions as in claim 29, wherein said prediction is used to create a report that estimates the growth of plants.

32. A process for predicting the behavior of a target population under given conditions as in claim 22, wherein said prediction is used to adjust the data in a computer program to change the computer's output.

33. (NEW) A method for processing electro-magnetic signals, comprising:
(a) selecting an equation or set equations that models the behavior of electromagnetic signal;
(b) selecting a range for each input variable in said equation or set of equations;
(c) selecting the number of trials;
(d) selecting the logical distribution function of each of the said input variables;
(e) selecting at least two fuzzy level boundaries for each of the said phenomenon;

(f) generating values for all of said input variables of all of said trials, within said input variable's said range and within said logical distribution, using Monte Carlo simulations;
(g) solving said equation or equations to produce outputs to produce a Meta Model;
(h) increasing or decreasing the generated values of one of said input variables by fixed increments for each of said trials;
(i) solving said equation or equations using the incremented or decremented values of one of said input values;
(j) identifying the fuzzy level placement within said fuzzy level boundary for each of said outputs generated using said incremented or decremented input values for each of said trials;
(k) calculating the probability of said fuzzy level placement for one of said outputs by dividing the number of said outputs at each of the said fuzzy levels by the number of said trials;
(l) categorizing said fuzzy level placements for said output as indicating a positive or negative correlation;
(m) categorizing the magnitude of said fuzzy level placement when there are more than two of the said fuzzy level boundaries;
(n) repeating the process steps h through m for each of the remaining input variables;
(o) mapping said correlations and said probabilities of the relationships between said input variables and phenomena in the form of a fuzzy cognitive map; and
(p) transforming said electro-magnetic signal based on said fuzzy cognitive map into a useful output signals.

34. (NEW) A process for creating optimized materials, comprising:
(a) selecting an equation or set equations that models the behavior of a material;
(b) selecting a range for each input variable in said equation or set of equations;
(c) selecting the number of trials;
(d) selecting the logical distribution function of each of the said input variables;
(e) selecting at least two fuzzy level boundaries for each of the said phenomenon;
(f) generating values for all of said input variables of all of said trials, within said input variable's said range and within said logical distribution, using Monte Carlo simulations;

(g) solving said equation or equations to produce outputs to produce a Meta Model;
(h) increasing or decreasing the generated values of one of said input variables by fixed increments for each of said trials;
(i) solving said equation or equations using the incremented or decremented values of one of said input values;
(j) identifying the fuzzy level placement within said fuzzy level boundary for each of said outputs generated using said incremented or decremented input values for each of said trials;
(k) calculating the probability of said fuzzy level placement for one of said outputs by dividing the number of said outputs at each of the said fuzzy levels by the number of said trials;
(l) categorizing said fuzzy level placements for said output as indicating a positive or negative correlation;
(m) categorizing the magnitude of said fuzzy level placement when there are more than two of the said fuzzy level boundaries;
(n) repeating the process steps h through m for each of the remaining input variables;
(o) mapping said correlations and said probabilities of the relationships between said input variables and phenomena in the form of a fuzzy cognitive map;
(p) adjusting the chemical and/or the structural characteristics of said material using said fuzzy cognitive map; and
(q) synthesizing said material to produce a product.

35. (NEW) A method for optimizing a process, comprising:
(a) selecting an equation or set equations that models the behavior of a process;
(b) selecting a range for each input variable in said equation or set of equations;
(c) selecting the number of trials;
(d) selecting the logical distribution function of each of the said input variables;
(e) selecting at least two fuzzy level boundaries for each of the said phenomenon;
(f) generating values for all of said input variables of all of said trials, within said input variable's said range and within said logical distribution, using Monte Carlo simulations;
(g) solving said equation or equations to produce outputs to produce a Meta Model;

(h) increasing or decreasing the generated values of one of said input variables by fixed increments for each of said trials;
(i) solving said equation or equations using the incremented or decremented values of one of said input values;
(j) identifying the fuzzy level placement within said fuzzy level boundary for each of said outputs generated using said incremented or decremented input values for each of said trials;
(k) calculating the probability of said fuzzy level placement for one of said outputs by dividing the number of said outputs at each of the said fuzzy levels by the number of said trials;
(l) categorizing said fuzzy level placements for said output as indicating a positive or negative correlation;
(m) categorizing the magnitude of said fuzzy level placement when there are more than two of the said fuzzy level boundaries;
(n) repeating the process steps h through m for each of the remaining input variables;
(o) mapping said correlations and said probabilities of the relationships between said input variables and phenomena in the form of a fuzzy cognitive map; and
(p) adjusting said process, using said fuzzy cognitive map, to optimize said process.

36. The method in claim 35, wherein said process is use for the preparation of plans for the design of a facility that manufactures product.

37. The method in claim 35, wherein said process is used to create a document that serves as a template for the organization of a company.

38. The method in claim 35, wherein said process is a chemical process.

39. The method in claim 35 wherein, said process output is used to adjust the data in a computer program to change the computer's output.